

Application No. 10/724,201
Amendment dated August 16, 2006
Reply to Office Action of May 17, 2006

Docket No.: 0941-0872P

REMARKS

Claims 15-21 remain present in this application.

Claim 15 has been amended. Reconsideration of the application, as amended, is respectfully requested.

Amendments to the Claims

Support for the foregoing amendments to claim 15 can be found on pages 8-22 of the originally filed specification and in Figs. 3a-5c. More specifically, the limitation "the barrier layer is not exposed after the first CMP process" can be found on page 9, lines 18-24 and seen in Figs. 3a-5c. It is therefore respectfully submitted that no new matter has been added.

Rejection under 35 USC 103

Claims 15-20 stand rejected under 35 USC 103 as being unpatentable over Hsu et al., US Publication 2004/0067640, in view of Misra et al., US Patent 6,461,225. This rejection is respectfully traversed.

Claim 21 stands rejected under 35 USC 103 as being unpatentable over Hsu et al. in view of Misra et al., and further in view of Gotkis et al., U.S. Publication 2004/0058620. This rejection is respectfully traversed.

The Examiner asserts that Hsu discloses the CMP rework method as set forth in independent claim 15. However, independent claim 15 of the present application recites (emphasis added):

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15. A CMP rework method, comprising the steps of:
providing a semiconductor substrate which has a patterned dielectric layer, a barrier layer over the patterned dielectric layer, and a conductive layer over the barrier layer;
performing a first CMP process to remove part of the conductive layer, wherein the barrier layer is not exposed after the first CMP process;
depositing a layer of material substantially the same as the conductive layer over the conductive layer; and
performing a second CMP process to expose the patterned dielectric layer.

It is clear that the CMP rework method of independent claim 15 comprises performing a first CMP process to remove part of the conductive layer, wherein the barrier layer is not exposed after the first CMP process.

However, as is discussed in paragraph [0028] and shown in FIG. 1D, Hsu et al. discloses (emphasis added):

“By the term ‘endpoint detection’ is meant that point at which a portion of the underlying barrier/adhesion layer is revealed by the polishing process. Endpoint detection may be accomplished by any process as long as the endpoint detection process detects a point in the CMP process at which a portion of the semiconductor polishing surface includes exposure of a portion of the barrier/adhesion layer 24A underlying copper layer 28A.”

Accordingly, it is obvious that the CMP rework method of independent claim 15 differs from the CMP rework method of Hsu et al., since the barrier/adhesion layer 24A is revealed by the polishing process.

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The secondary reference to Misra fails to overcome the above-noted deficiencies of Hsu et al., as the barrier layer 36 of Misra is removed after a CMP process (see column 4, lines 59-63, and FIG. 3F).

It is therefore respectfully submitted that the prior art utilized by the Examiner fails to teach or suggest the method of independent claim 15 and its dependent claims. Reconsideration and withdrawal of the 35 USC 103 rejections are respectfully requested.

Conclusion

Favorable reconsideration and an early Notice of Allowance are earnestly solicited.

In the event that any outstanding matters remain in this application, the Examiner is invited to contact the undersigned at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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